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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,630	10/29/2003	Jay R. Walton	010248C1	5492
23696	7590	03/15/2006	EXAMINER	
QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			VO, NGUYEN THANH	
			ART UNIT	PAPER NUMBER
			2685	

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,630

Applicant(s)

WALTON ET AL.

Examiner

Nguyen T. Vo

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-49 of U.S. Patent No. 6,662,024.

Although the conflicting claims are not identical, they are not patentably distinct from each other because they are all related to scheduling data transmission in a wireless communication system for selecting at least one set of terminals to receive data transmission based on the received channel state information (CSI) which are feedback from the terminals.

3. Claims 1-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-65 of copending Application No. 10/042,529. Although the conflicting claims are not identical,

they are not patentably distinct from each other because they are all related to scheduling data transmission in a wireless communication system for selecting at least one set of terminals to receive data transmission based on the received channel state information (CSI) which are feedback from the terminals.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of copending Application No. 09/859,346. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are all related to scheduling data transmission in a wireless communication system for selecting at least one set of terminals to receive data transmission based on the received channel state information (CSI) which are feedback from the terminals.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 15, 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Wallace (6,473.467, cited by examiner).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claim 15, Wallace discloses a base station in a multiple-input multiple-output (MIMO) communication system 100 (see column 3 lines 34-36), comprising a plurality of transmit antennas configured to receive and transmit data signals (see figure 1A; column 4 lines 36-63); and a scheduler configured to receive channel state information (CSI) associated with a plurality of terminals in the communication system (see column 8 line 53 to column 9 line 63; column 18 lines 45-62; column 19 line 58 to column 20 line 9), select a set of one or more terminals for data transmission based at least in part on the received CSI (see column 8 lines 53 to column 9 line 63; column 18 lines 45-62; column 19 line 58 to column 20 line 9), and assign the plurality of transmit antennas to the one or more selected terminals (see column 19 lines 58-60; column 20 lines 10-13). Wallace thus discloses all the claimed limitations.

As to claim 17, it is rejected for the same reasons as set forth in claim 15. In addition, Wallace further discloses a terminal comprising a plurality of receive antenna configured to receive signals transmitted from a base station as claimed (see column 24

lines 25-42); and a processor configured to process the receive signals, obtain channel state information (CSI) associated with the received signals, and sends the CSI back to the base station (see column 8 line 53 to column 9 line 63).

As to claim 18, it is rejected for the same reasons as set forth in claim 15. In addition, Wallace further discloses a terminal comprising a plurality of receive antenna configured to receive signals transmitted from a base station as claimed (see column 24 lines 25-42); and a processor configured to process the receive signals, obtain channel state information (CSI) associated with the received signals, and sends the CSI back to the base station (see column 8 line 53 to column 9 line 63).

7. **Since the applied reference Wallace (6,473,467) has a common assignee with the instant application, it does not constitutes prior art under 35 U.S.C. 103.**

8. Claims 15, 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kogiantis (US 2002/0068611, cited by examiner).

As to claim 15, Kogiantis discloses a base station in a multiple-input multiple-output (MIMO) communication system (see paragraphs [0006]-[0007]), comprising a plurality of transmit antennas configured to receive and transmit data signals (see paragraphs [0013]-[0014]); and a scheduler configured to receive channel state information (CSI) associated with a plurality of terminals in the communication system (see paragraphs [0021], [0024]), select a set of one or more terminals for data transmission based at least in part on the received CSI (see paragraphs [0019], [0021], [0024]), and assign the plurality of transmit antennas to the one or more selected

terminals (see paragraphs [0021], [0024]). Kogiantis thus discloses all the claimed limitations.

As to claim 17, it is rejected for the same reasons as set forth in claim 15. In addition, Kogiantis further discloses a terminal comprising a plurality of receive antenna configured to receive signals transmitted from a base station as claimed (see paragraph [0006]); and a processor configured to process the receive signals, obtain channel state information (CSI) associated with the received signals, and sends the CSI back to the base station (see paragraphs [0019], [0021], [0024]).

As to claim 18, it is rejected for the same reasons as set forth in claim 15. In addition, Kogiantis further discloses a terminal comprising a plurality of receive antenna configured to receive signals transmitted from a base station as claimed (see paragraph [0006]); and a processor configured to process the receive signals, obtain channel state information (CSI) associated with the received signals, and sends the CSI back to the base station (see paragraphs [0019], [0021], [0024]).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ling (US 7,006,848); Walton (US 2003/0125040); Walton (US 2006/0039312) all disclose MIMO communication systems.

Dam (US 6,711,987) and Angus (US 6,347,235) disclose uplink scheduling in mobile communication system.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Vo whose telephone number is (571) 272-7901. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen Vo

Nguyen Vo
3-2-2006

NGUYEN T. VO
PRIMARY EXAMINER